

WHAT IS CLAIMED IS:

1. A process for producing a substantially stable dispersion comprising at least one hydrophobic plant sterol and an aqueous material comprising:

mixing the at least one hydrophobic plant sterol with said aqueous material to form a first dispersion of particles of the at least one hydrophobic plant sterol and said aqueous material;

homogenizing the first dispersion to obtain a second dispersion of particles of the at least one hydrophobic plant sterol and said aqueous material, wherein the particle size of the at least one hydrophobic plant sterol particles in said first dispersion is from about 0.1 microns to about 100 microns, or the particle size of the at least one hydrophobic plant sterol particles in said second dispersion is from about 0.1 microns to about 100 microns, or wherein the particle size of said hydrophobic plant sterol particles in both said first dispersion and said second dispersion is from about 0.1 microns to about 100 microns.

2. The process of Claim 1 wherein said particle size of the at least one hydrophobic plant sterol in said first dispersion is from about 0.1 micron to about 50 microns or the particle size of the at least one hydrophobic plant sterol in said second dispersion is from about 0.1 micron to about 50 microns, or the particle size of the at least one hydrophobic plant sterol in both said first dispersion and said second dispersion is from about 0.1 micron to about 50 microns.

3. The process of Claim 2 wherein said particle size of the at least one hydrophobic plant sterol in said first dispersion is from about 0.1 micron to about 30 microns or the particle size of the at least one hydrophobic plant sterol in said second dispersion is from about 0.1 micron to about 30 microns, or the particle size

of the at least one hydrophobic plant sterol in both said first dispersion and said second dispersion is from about 0.1 micron to about 30 microns.

4. The process of Claim 3 wherein the particle size of the at least one hydrophobic plant sterol in said first dispersion is from about 0.1 micron to about 10 microns or the particle size of the at least one hydrophobic plant sterol in said second dispersion is from about 0.1 micron to about 10 microns, or the particle size of the at least one hydrophobic plant sterol in both said first dispersion and said second dispersion is from about 0.1 micron to about 10 microns.

5. The process of Claim 1 wherein the majority of the at least one hydrophobic plant sterol ranges in particle size from about 0.2 microns to about 10 microns.

6. The process of Claim 5 wherein the majority of the at least one hydrophobic plant sterol ranges in particle size from about 0.2 microns to about 2.5 microns.

7. The process of Claim 6 wherein the majority of the at least one hydrophobic plant sterol ranges in particle size from about 0.4 microns to about 1.5 microns.

8. The process of Claim 7 wherein the majority of the at least one hydrophobic plant sterol ranges in particle size from about 0.3 microns to about 0.4 microns.

9. The process of Claim 1 wherein the at least one hydrophobic plant sterol is selected from:

sitosterol, campesterol, stigmasterol, spinosterol, taraxasterol, brassicasterol, desmosterol, chalinosterol, poriferasterol, clionasterol, and ergosterol.

10. The process of Claim 1 wherein the at least one hydrophobic plant sterol is selected from hydrogenation products of plant sterols.

11. The process of Claim 1 wherein the at least one hydrophobic plant sterol is selected from:

sitostanol, campestanol, stigmastanol, spinostanol, taraxastanol, brassicastanol, desmostanol, chalinostanol, poriferastanol, clionastanol, and ergostanol.

12. The process of Claim 1 wherein said aqueous material includes solid materials either dissolved or dispersed therein, and wherein the solids content of said aqueous material is from about 200 to about 1000 grams per liter of said aqueous material.

13. The process of Claim 12 wherein said aqueous material includes solid materials either dissolved or dispersed therein, and wherein the solids content of said aqueous material is from about 400 to about 900 grams per liter of said aqueous material.

14. The process of Claim 13 wherein said aqueous material includes solid materials either dissolved or dispersed therein, and wherein the solids content of said aqueous material is from about 600 to about 800 grams per liter of said aqueous material.

15. The process of Claim 1 wherein, in said first dispersion, the at least one hydrophobic plant sterol is present in an amount from about 1 to about 100 grams per liter of said aqueous material.

16. The process of Claim 15 wherein, in said first dispersion, the at least one hydrophobic plant sterol is present in an amount from about 10 to about 60 grams per liter of said aqueous material.

17. The process of Claim 16 wherein, in said first dispersion, the at least one hydrophobic plant sterol is present in an amount from about 20 to about 30 grams per liter of said aqueous material.

18. The process of Claim 17 wherein, in said first dispersion, second dispersion, or both first and second dispersions, the at least one hydrophobic plant sterol is present in an amount from about 15 to about 30 grams per liter of said aqueous material.

19. The process of Claim 1 wherein said homogenizing is carried out at a pressure of from about 100 psi to about 14,500 psi.

20. The process of Claim 19 wherein said homogenizing is carried out at a pressure of from about 500 psi to about 10,000 psi.

21. The process of Claim 20 wherein said homogenizing is carried out at a pressure of from about 1,000 psi to about 5,000 psi.

22. The process of Claim 21 wherein said homogenizing is carried out at a pressure of from about 2,000 psi to about 5,000 psi

23. The process of Claim 1 wherein said homogenizing is carried out in multiple stages, at different pressures.

24. The process of Claim 23 wherein said homogenizing is carried out at a pressure of from about 2000 psi to about 5000 psi followed by a second homogenizing at a pressure of from about 300 psi to about 1000 psi.

25. The process of Claim 1 wherein said aqueous material comprises at least one fruit juice concentrate.

26. The process of Claim 25 wherein water is added to said second dispersion of particles of the at least one hydrophobic plant sterol and the at least one fruit juice concentrate to obtain an aqueous beverage mixture.

27. The process of Claim 26 wherein the aqueous beverage mixture has a concentration of about 11° Brix to about 13° Brix.

28. The process of claim 1 wherein said aqueous material comprises at least one citrus juice concentrate.

29. The process of Claim 28 wherein water is added to said second dispersion of particles of the at least one hydrophobic plant sterol and said citrus juice concentrate to obtain an aqueous beverage mixture.

30. The process of Claim 29 wherein the aqueous beverage mixture has a concentration of from about 11° Brix to about 13° Brix.

31. The process of Claim 28 wherein the at least one citrus juice concentrate is orange juice concentrate.

32. The process of Claim 1 wherein the viscosity of the substantially stable dispersion is from about 100 cps to about 30,000 cps.

33. The process of Claim 32 wherein the viscosity of the substantially stable dispersion is from about 5,000 cps to about 30,000 cps.

34. The process of Claim 33 wherein the viscosity of the substantially stable dispersion is from about 6,000 cps to about 18,000 cps.

35. The process of Claim 34 wherein the viscosity of the substantially stable dispersion is from about 8,000 cps to about 15,000 cps.

36. The process of Claim 1 further comprising adding at least one vitamin either before, during, or after the production of the substantially stable dispersion.

37. The process of Claim 36 wherein the at least one vitamin is chosen from at least one of water soluble vitamins and oil soluble vitamins.

38. A process for producing a substantially stable dispersion comprising at least one hydrophobic plant sterol and an aqueous material comprising:

mixing the at least one hydrophobic plant sterol with said aqueous material to form a first dispersion of particles of the at least one hydrophobic plant sterol and said aqueous material;

heating the first dispersion of particles of the at least one hydrophobic plant sterol and said aqueous material to form a heated first dispersion; and

homogenizing the heated first dispersion to obtain a second dispersion of particles of the at least one hydrophobic plant sterol and said aqueous material, wherein the particle size of the at least one hydrophobic plant sterol particles in said first dispersion is from about 0.1 microns to about 100 microns, or the particle size of the at least one hydrophobic plant sterol particles in said second dispersion is from about 0.1 microns to about 100 microns, or wherein the particle size of said hydrophobic plant sterol particles in both said first dispersion and said second dispersion is from about 0.1 microns to about 100 microns.

39. A process for producing a substantially stable dispersion comprising at least one hydrophobic plant sterol and an aqueous material comprising:

mixing the at least one hydrophobic plant sterol with said aqueous material to form a first dispersion of particles of the at least one hydrophobic plant sterol and said aqueous material;

homogenizing the first dispersion to obtain a second dispersion of particles of the at least one hydrophobic plant sterol and said aqueous material, wherein the particle size of the at least one hydrophobic plant sterol particles in said first dispersion is from about 0.1 microns to about 100 microns, or the particle size of the at least one hydrophobic plant sterol particles in said second dispersion is from about 0.1 microns to about 100 microns, or wherein the particle size of said hydrophobic plant sterol particles in both said first dispersion and said second dispersion is from about 0.1 microns to about 100 microns; and

heating the second dispersion of particles of the at least one hydrophobic plant sterol and said aqueous material to produce a heated second dispersion.

40. The process of Claim 39 wherein said second dispersion of particles of the at least one hydrophobic plant sterol is heated to a temperature of from about 32°F to about 212°F for a period of time of from about 1 second to about 20 seconds to form the heated second dispersion.

41. The process of Claim 40 wherein the second dispersion of particles of the at least one hydrophobic plant sterol is heated to a temperature of from about 120°F to about 190°F for a period of time of from about 1 second to about 20 seconds to form the heated second dispersion.

42. The process of Claim 39 wherein said heated second dispersion is cooled to a temperature ranging from about 17°F to about 90°F for a period of time of from about 1 second to about 12 seconds.

43. The process of claim 42 wherein the heated second dispersion is cooled to a temperature of from about 35°F to about 40°F for a period of time of about 3 seconds to about 7 seconds.